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LAW OFFICES OF MARK C. PICKERING  
P.O. BOX 300  
PETALUMA, CA 94953

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| EXAMINER |
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WANG, QUAN ZHEN

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| ART UNIT | PAPER NUMBER |
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2613

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 10/617,982             |  | HOCHBAUM, SHIMON    |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Quan-Zhen Wang         |  | 2613                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 24-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on June 5, 2006 has been entered.

### ***Response to Amendment***

2. The amendment filed June 5, 2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added materials which are not supported by the original disclosure are as follows: "an end of a single network cable"; "a first identifier represents a first optical device that is connected to an end of a single network cable"; and "a second identifier represents a second optical device that is to be connected to the end of the single network cable after the first optical device has been removed from the end of the single network cable".

Applicant is required to cancel the amendments to the specification on pages 9 and 10 that contains new matter in the reply to this Office Action.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "a second optical device that is to be connected to the end of the single network cable" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

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4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-22, and 24-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites the newly added limitation of “to store a first identifier and a second identifier, the first identifier representing a first optical device that is connected to an end of a single network cable, the second identifier representing a second optical device that is to be connected to the end of the single network cable after the first optical device has been removed from the end of the single network cable”. Nowhere did the specification as it was originally filed disclose the cited limitation.

Claim 6 recites the newly added limitation of “to store a first identifier and a second identifier, the first identifier representing a first optical device that is connected to an end of a single network cable, the second identifier representing a second optical device that is to be connected to the end of the single network cable after the first optical device has been removed from the end of the single network cable”. Nowhere did the specification as it was originally filed disclose the cited limitation.

Claim 11 recites the newly added limitation of “an end of a single cable”. Nowhere does the specification as it was originally filed disclose the cited limitation.

Claim 11 recites the limitation of “only one optical device being connected to the end of the single cable at a time”. Nowhere did the specification as it was originally filed disclose the cited limitation.

Claim 18 recites the limitation of “associated a second identifier with the end of the single network cable so that the first optical device continues to receive network traffic”. Nowhere did the specification as it was originally filed disclose the cited limitation.

Claim 18 recites the limitation of “dispatching a technician to the end of the single network cable to service the first optical device, the first optical device continues to receive network traffic until the first device is disconnected from the network by the technician”. Nowhere did the specification as it was originally filed disclose the cited limitation.

Claim 19 recites the limitation of “end of the single network cable”. Nowhere did the specification as it was originally filed disclose the cited limitation.

Claim 20 recites the limitation of “end of the single network cable”. Nowhere did the specification as it was originally filed disclose the cited limitation.

Claim 21 recites the limitation of “first identifier that represents an end of a single network cable, a second identifier that represents a first network device that is connected to the end of the single network cable, and a third identifier that represents a second network device that is connectable to the end of the single network cable”. Nowhere did the specification as it was originally filed disclose the cited limitation.

Claim 24 recites the limitations of "... an end of single cable ..."; " associating a replacement device with the end of the single cable when the functioning network device is to be serviced...". Nowhere did the specification as it was originally filed disclose the cited limitation.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 18-20 and 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites the limitation of "associating a second identifier with the end of the single network cable so that the first optical device continues to receive network traffic". However, it is not clearly how the second identifier is involved with the first optical device receiving network traffic. According to the present invention, only a first identifier representing the first optical device is required for the first optical device to receive network traffic.

Claim 24 recites the limitation of "associating a replacement network device with the end of the single cable when the functioning network device is to be serviced so that the functioning network device continues to receive network information". However, it is not clearly how the replacement network device is involved with the functioning optical device receiving network information. According to the present invention, only a first



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identifier representing the functioning optical device is required for the functioning optical device to receive network information.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-17 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art (prior art fig. 1 of the instant application) in view of Kidder et al. (U.S. Patent Application Publication US 2004/0031030 A1).

Regarding claims 1, 6, and 21, the Admitted Prior Art (prior art fig. 1 of the instant application) teaches an optical line terminal device (prior art fig. 1, OLT 110) comprising: an optical transmitter (prior art fig. 1, optical transmitter 112) to receive downstream information, and outputs downstream light pulses that represent the downstream information (the instant application: page 3, lines 11-19); an optical receiver (prior art fig. 1, optical receiver 114) to receive upstream light pulses and converts the upstream light pulses into upstream information (the instant application: page 3, lines 20-25); and a controller (prior art fig. 1, controller 120) connected to the optical transmitter and the optical receiver, the controller including: a memory (prior art fig. 1, memory 120A) to store a first identifier representing a first optical device (fig. 1, ONT1-ONTn) that is



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connected to an end (fig. 1, EP1-Epn) of a single network cable; and a processor (prior art fig. 1, CPU 120B) connected to the memory that prepares the downstream information for the optical transmitter, and receives the upstream information from the optical receiver. The Admitted Prior Art (prior art fig. 1 of the instant application) differs from the claimed invention in that the Admitted Prior Art (prior art fig. 1 of the instant application) does not specifically teach that the memory stores a second identification number representing a second optical device that is to be connected to the end of the single network cable after the first optical device has been removed from the end of the single network cable. However, it is well known in the art to have a replacement for a fault network device and store an identifier of the replacement network device. For example, Kidder teaches to have a second network device to replace a fault network device and store an identifier of the replacement network device (paragraphs 0865-0870). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to have a second network device to be connected to an end point and configure the controller to store an identification number representing the device, as it is taught by Kidder, in the system of the Admitted Prior Art (prior art fig. 1 of the instant application) in order to provide fault tolerance within a network.

As to claim 21, the Admitted Prior Art (prior art fig. 1 of the instant application) further teaches to store a network end point number which can be interpreted as the claimed "first identification number". The first identification number representing a first optical device above can be interpreted as the claimed "second identification number";

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and the second identification number representing a second optical device above can be interpreted as the claimed "third identification number".

Regarding claims 2, 7, and 22, the Admitted Prior Art (prior art fig. 1 of the instant application) further teaches the downstream information includes a first identification number when a first optical device is connected to the network end point (the instant application, page 5, lines 20-29). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a second identification number when a second optical device is connected to the network end point, since it is mere duplication of the essential working steps which involves only routine skill in the art.

Regarding claims 3 and 8, the Admitted Prior Art (prior art fig. 1 of the instant application) further teaches that the first downstream information output by controller includes the active identity number of an optical network terminal. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to remove the first identification number from the downstream information and replace with the second identification number when the first optical device fails to respond to the downstream information in order to send information data to the second optical device which replaces first optical device.

Regarding claims 4 and 9, the Admitted Prior Art (prior art fig. 1 of the instant application) further teaches that the first optical device is an optical network terminal (prior art fig. 1, ONT1).

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Regarding claims 5 and 10, the second optical device is inherently an optical network terminal since the second optical device is the replacement of the first optical device.

Regarding claim 11, the Admitted Prior Art (prior art fig. 1 of the instant application) and Kidder have been discussed above in regard to claim 1. The Admitted Prior Art (prior art fig. 1 of the instant application) further teaches periodically sending out an identification number message that includes the active identity number of the to-be-added optical network terminal ONT (page 6, lines 15-22) and Kidder further discloses that only one network device being connected to the end point at a time (paragraphs 0865-0870). The modified system of the Admitted Prior Art (prior art fig. 1 of the instant application) and Kidder differs from the claimed invention in that the Admitted Prior Art (prior art fig. 1 of the instant application) and Kidder do not specifically teach to determine whether the first optical device has failed to response to the first message a predetermined number of times and send a second message to the end point to be received by a second optical device when the first optical device fails to respond the predetermine number of times, and send a second message to the end point to be received by a second optical device when the first optical device fails to respond the predetermined number of times. However, the Admitted Prior Art (prior art fig. 1 of the instant application) further teaches periodically sending out an identification number message that includes the active identity number of the to-be-added optical network terminal ONT (page 6, lines 15-22) to check if an ONT has come on line. Therefore, it would have been obvious for one of ordinary skill in the art at the time

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when the invention was made to periodically send out a first message to an end point to a first optical device to determine if the first device responds to the message and determine whether the first optical device has failed to respond to a predetermined number of first messages, as it is taught by the APA, and sending a second message with a second identification number that represents a second optical device, which is merely a duplication procedure of periodically sending out another message, when the first optical device fails to respond to a number of first messages in order to bring the second optical device coming on line.

Regarding claim 12, the Admitted Prior Art (prior art fig. 1 of the instant application) further teaches that when a network end point is to be added to network, the active identifier of the optical network terminal to be connected to the network end point to provide service to the end user is added to the table in the memory in a manner that establishes a relationship between the network end point and the active identifier of the ONT (the instant application: page 6, lines 9-14). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to determine if the second optical device has responded to the second message with the second identifier; and mark the second identifier as an active identifier when the second optical device responds to the second message in order to properly replace the faulty first optical device with a working second optical device. Claims 13-15, are duplication steps of claim 12.

Regarding claim 16, the Admitted Prior Art (prior art fig. 1 of the instant application) further teaches that the first optical device is an optical network terminal (prior art fig. 1, ONT1).

Regarding claim 17, the second optical device is inherently an optical network terminal since the second optical device is the replacement of the first optical device.

10. Claims 18-20, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art (prior art fig. 1 of the instant application) in view of Kidder et al. (U.S. Patent Application Publication US 2004/0031030 A1) and further in view of Daudelin et al. (U.S. Patent US 6,591,389 B1).

Regarding claims 18 and 24, as they are understood in view of the above 112 problems, the Admitted Prior Art (prior art fig. 1 of the instant application) and Kidder have been discussed above in regard to claim 1. The modified system of the Admitted Prior Art (prior art fig. 1 of the instant application) and Kidder differs from the claimed invention in that the Admitted Prior Art (prior art fig. 1 of the instant application) and Kidder do not specifically teach dispatching a technician to the network end point to service the network end point. However, it is well known business strategy in the art to dispatch a technician to the network end point to service the network end point because of the complexity of the electronics and optical components. For example, Daudelin discloses to dispatch a technician to fix or replace a failed circuit pack (column 8, lines 24-28). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to dispatch a technician, as it is disclosed by Daudelin, for the modified transmission system of the Admitted Prior Art (prior art fig. 1

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of the instant application) and Kidder in order to minimize the interruption of the network service in case the first optical device malfunctions.

Regarding claim 19, Kidder further teaches to remove the first network device from the network end point; and installing the second (the replacement) network device to the network end point.

Regarding claim 20, the modified system of the Admitted Prior Art (prior art fig. 1 of the instant application), Kidder, and Daudelin further differs from the claimed invention in that the Admitted Prior Art (prior art fig. 1 of the instant application), Kidder, and Daudelin do not specifically teach: inspecting the first optical device and determining whether the first optical device can be fixed within a predefined period of time; fixing the first optical device when the first optical device can be fixed within the predefined period of time; removing the first optical device from the network end point when the first optical device can not be fixed within the predefined period of time; and installing the second optical device to the network end point after the first optical device has been removed. However, Daudelin discloses to dispatch a technician to fix, or replace a failed circuit pack (column 8, lines 26-28). The process implicitly includes the steps of inspecting the device and determining whether the device can be fixed within a predefined period of time; fixing the device when the device can be fixed within the predefined period of time; removing the device if the device can not be fixed within the predefined period of time; and installing the replacement after the device has been removed. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to inspect the first optical device and determining

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whether the first optical device can be fixed within a predefined period of time; fix the first optical device when the first optical device can be fixed within the predefined period of time; remove the first optical device from the network end point when the first optical device can not be fixed within the predefined period of time; and install the second optical device to the network end point after the first optical device has been removed at the network end point of the modified system of the Admitted Prior Art (prior art fig. 1 of the instant application), Kidder, and Daudelin in order to minimize the interruption of the network service in case the first optical device malfunctions.

11. Claims 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art (prior art fig. 1 of the instant application) in view of Kidder et al. (U.S. Patent Application Publication US 2004/0031030 A1) and Daudelin et al. (U.S. Patent US 6,591,389 B1) and further in view of Qin et al. (U.S. Patent US 6,646,777 B2).

Regarding claim 25, the modified system does not specifically teach that the functioning network device is fully functioning is only partially functioning. However, it is well known in the art to replace, repair, or upgrade optical devices. For example, Qin discloses to replace, repair, or upgrade optical devices (column 16, lines 33-49). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to replace a fully in order to upgrade a lower version network device.



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12. Claim 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art (prior art fig. 1 of the instant application) in view of Kidder et al. (U.S. Patent Application Publication US 2004/0031030 A1) and Daudelin et al. (U.S. Patent US 6,591,389 B1) and further in view of Neeley et al. (U.S. Patent Application Publication 2003/0012485 A1).

Regarding claims 26 and 27, the modified system does not specifically teach to remove a partially functioning device and the steps of steps of removing the functioning network device from the end of the cable after the replacement network device has been associated to the functioning network device; reinstalling the functioning network device to the end of the cable if full functionality can be provided with the functioning network device within a predetermined period of time; installing the replacement network device to the end of the cable if full functionality can not be provided with the functioning network device within a predetermined period of time; and alternately sending the network information to the functioning network device and the replacement network device until one of the devices receives the network information. However, it is well known in the art to remove or install optical devices, including partially functioning devices. For example, Neeley discloses to remove or install "hot-swap" optical devices (paragraph 0022). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to remove partially functioning devices and to include the steps of removing the functioning network device from the end of the cable after the replacement network device has been associated to the functioning network device; reinstalling the functioning network device to the end of the cable if full

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functionality can be provided with the functioning network device within a predetermined period of time; installing the replacement network device to the end of the cable if full functionality can not be provided with the functioning network device within a predetermined period of time; and alternately sending the network information to the functioning network device and the replacement network device until one of the devices receives the network information in order to upgrade a lower version network device or replacing a malfunctioning device.

### ***Response to Arguments***

13. Applicant's arguments filed on June 6, 2006 have been fully considered but they are not persuasive.

Regarding the objection of the drawing, the current amendment still does not show "a second optical device" in the drawings. Only one optical device is associated with "a network end point". Therefore, "a second optical device" must be shown in order to comply with the requirement set forth by 37 CFR 1.83(a) or the feature(s) canceled from the claim(s). No new matter should be entered.

14. Applicant's other arguments filed in June 6, 2006 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sutherland et al. (U.S. Patent Application Publication US 2003/0177215 A1) disclose an apparatus for uses in a point-to-multipoint network. Sala et al. (U.S. Patent Application Publication US 2003/0152389 A1) disclose filtering and forwarding frames at an optical line terminal. Garg et al. (U.S. Patent Application Publication US 2003/0078947 A1) disclose methods for assigning unique identifiers in a distributed fault tolerant application.


16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw  
9/9//2006



**JASON CHAN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**